CLAIMS

We claim:

1.   A method, comprising:
partitioning a cache array into one or more special-purpose entries and one or
    more general-purpose entries, wherein special-purpose entries are only
    allocated for one or more streams having a particular stream ID.

2.   The method as claimed in claim 1, further comprising
allocating the one or more special-purpose entries based on the particular stream
    ID and a particular input address.

3.   The method as claimed in claim 2, further comprising
storing data from the one or more streams in the one or more special-purpose
    entries when the particular stream ID and the particular input address
    match a predetermined stream ID and a predetermined input address; and
storing data from the one or more streams in the one or more general-purpose
    entries when the particular stream ID and the particular input address do
    not match the predetermined stream ID and the predetermined input
    address.

4.   The method as claimed in claim 3, further comprising
determining when the particular stream ID and the particular input address match
    the predetermined stream ID and the predetermined input address using
    special-purpose control logic; and

using a cache replacement algorithm implemented using general-purpose control

logic for the one or more general-purpose entries.

5.   The method as claimed in claim 4, further comprising determining

if a cross-access scenario exists.

6.   The method as claimed in claim 5, wherein the one or more

streams are special-purpose streams including graphics streams.

7.   A device comprising:

a cache memory array partitioned into one or more special-purpose entries and

one or more general-purpose entries, wherein special-purpose entries are only

allocated for one or more streams having a particular stream ID.

8.   The device as claimed in claim 7 further comprising:

control logic to allocate the one or more special-purpose entries based on the

particular stream ID and a particular input address.

9.   The device as claimed in claim 8, wherein the control logic further

comprises:

special-purpose control logic to store data from the one or more streams in the one

or more special-purpose entries when the particular stream ID and the

particular input address match a predetermined stream ID and a

predetermined input address; and

general-purpose control logic to store data from the one or more streams in the

one or more general-purpose entries when the particular stream ID and the

particular input address do not match the predetermined stream ID and the

predetermined input address.

10.   The device as claimed in claim 9, wherein the special-purpose

control logic determines when the particular stream ID and the particular input

address match the predetermined stream ID and the predetermined input address;

and the general-purpose control logic implements a cache replacement algorithm

for the one or more general-purpose entries.

11.   The device of claim 10, further comprising a DRAM controller

integrated with the cache memory array.

12.   The device of claim 11, further comprising an integrated graphics

controller, a host AGP controller, and an I/O hub interface coupled to the DRAM

controller.

13.   A computer-readable medium having stored thereon a plurality of

instructions, the plurality of instructions when executed by a computer, cause the

computer to perform the method comprising:

partitioning a cache array into one or more special-purpose entries and one or

more general-purpose entries, wherein special-purpose entries are only

allocated for one or more streams having a particular stream ID.

14.   The computer-readable medium of claim 13 having stored thereon additional instructions, the additional instructions when executed by a computer, cause the computer to further perform the method of allocating the one or more special-purpose entries based on the particular stream ID and a particular input address.

15.   The computer-readable medium of claim 14 having stored thereon additional instructions, the additional instructions when executed by a computer, cause the computer to further perform the method of

storing data from the one or more streams in the one or more special-purpose

entries when the particular stream ID and the particular input address

match a predetermined stream ID and a predetermined input address; and

storing data from the one or more streams in the one or more general-purpose

entries when the particular stream ID and the particular input address do

not match the predetermined stream ID and predetermined input address.

16.   The computer-readable medium of claim 15 having stored thereon-additional instructions, the additional instructions when executed by a computer, cause the computer to further perform the method of

determining when the particular stream ID and the particular input address match

the predetermined stream ID and the predetermined input address using

special-purpose control logic; and

using a cache replacement algorithm implemented using general-purpose control

logic for the one or more general-purpose entries.

17.   The computer-readable medium of claim 16 having stored thereon-
additional instructions, the additional instructions when executed by a computer,
cause the computer to further perform the method of determining if a cross-access
scenario exists.

18.   The computer-readable medium of claim 17, wherein the one or
more streams are special-purpose streams including graphics streams.

19.   A system, comprising:
means for partitioning a cache array into one or more special-purpose entries and
    one or more general-purpose entries, wherein special-purpose entries are only
    allocated for one or more streams having a particular stream ID.

20.   The system as claimed in claim 19, further comprising
means for allocating the one or more special-purpose entries based on the
    particular stream ID and a particular input address.

21.   The system as claimed in claim 20, further comprising
means for storing data from the one or more streams in the one or more special-
    purpose entries when the particular stream ID and the particular input
    address match a predetermined stream ID and a predetermined input
    address; and
means for storing data from the one or more streams in the one or more general-
    purpose entries when the particular stream ID and the particular input

address do not match the predetermined stream ID and predetermined input address.

22.   The system as claimed in claim 21, further comprising

means for determining when the particular stream ID and the particular input address match the predetermined stream ID and the predetermined input address using special-purpose control logic; and

means for using a cache replacement algorithm implemented using general-purpose control logic for the one or more general-purpose entries.

23.   The system as claimed in claim 22, further comprising means for determining if a cross-access scenario exists.

24.   The system as claimed in claim 23, wherein the one or more streams are special-purpose streams including graphics streams.